25.855(a), 25.993(f), and 25.1359(c) in effect on October 24, 1967, and

(2) Sections 25.803(b) and 25.803(c)(1) in effect on April 23, 1969.

(b) Irrespective of the date of application, each applicant for a supplemental type certificate (or an amendment to a type certificate) for an airplane manufactured after October 16, 1987, must show that the airplane meets the requirements of §25.807(c)(7) in effect on July 24, 1989.

(c) Compliance with subsequent revisions to the sections specified in paragraph (a) or (b) of this section may be elected or may be required in accordance with §21.101(a) of this chapter.

[Amdt. 25–72, 55 FR 29773, July 20, 1990, as amended by Amdt. 25–99, 65 FR 36266, June 7, 2000]

§25.3 Special provisions for ETOPS type design approvals.

(a) *Applicability*. This section applies to an applicant for ETOPS type design approval of an airplane:

(1) That has an existing type certificate on February 15, 2007; or

(2) For which an application for an original type certificate was submitted before February 15, 2007.

(b) *Airplanes with two engines*. (1) For ETOPS type design approval of an airplane up to and including 180 minutes, an applicant must comply with §25.1535, except that it need not comply with the following provisions of Appendix K, K25.1.4, of this part:

(i) K25.1.4(a), fuel system pressure and flow requirements;

(ii) K25.1.4(a)(3), low fuel alerting; and

(iii) K25.1.4(c), engine oil tank design.

(2) For ETOPS type design approval of an airplane beyond 180 minutes an applicant must comply with §25.1535.

(c) *Airplanes with more than two engines*. An applicant for ETOPS type design approval must comply with §25.1535 for an airplane manufactured on or after February 17, 2015, except that, for an airplane configured for a three person flight crew, the applicant need not comply with Appendix K, K25.1.4(a)(3), of this part, low fuel alerting.

[Doc. No. FAA–2002–6717, 72 FR 1873, Jan. 16, 2007]

§25.5 Incorporations by reference.

(a) The materials listed in this section are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding addresses noted below, and all are available for inspection at the National Archives and Records Administration (NARA), and at FAA, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057–3356. For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(b) The following materials are available for purchase from the following address: The National Technical Information Services (NTIS), Springfield, Virginia 22166.

(1) Fuel Tank Flammability Assessment Method User's Manual, dated May 2008, document number DOT/FAA/AR–05/8, IBR approved for §25.981 and Appendix N. It can also be obtained at the following Web site: *http://www.fire.tc.faa.gov/systems/fueltank/FTFAM.stm*.

(2) [Reserved]

[73 FR 42494, July 21, 2008]

Subpart B—Flight

GENERAL

§25.21 Proof of compliance.

(a) Each requirement of this subpart must be met at each appropriate combination of weight and center of gravity within the range of loading conditions for which certification is requested. This must be shown—

(1) By tests upon an airplane of the type for which certification is requested, or by calculations based on, and equal in accuracy to, the results of testing; and

(2) By systematic investigation of each probable combination of weight and center of gravity, if compliance cannot be reasonably inferred from combinations investigated.

(b) [Reserved]

(c) The controllability, stability, trim, and stalling characteristics of the airplane must be shown for each altitude up to the maximum expected in operation.

(d) Parameters critical for the test being conducted, such as weight, loading (center of gravity and inertia), airspeed, power, and wind, must be maintained within acceptable tolerances of the critical values during flight testing.

(e) If compliance with the flight characteristics requirements is dependent upon a stability augmentation system or upon any other automatic or power-operated system, compliance must be shown with §§ 25.671 and 25.672.

(f) In meeting the requirements of §§ 25.105(d), 25.125, 25.233, and 25.237, the wind velocity must be measured at a height of 10 meters above the surface, or corrected for the difference between the height at which the wind velocity is measured and the 10-meter height.

(g) The requirements of this subpart associated with icing conditions apply only if the applicant is seeking certification for flight in icing conditions.

(1) Each requirement of this subpart, except §§ 25.121(a), 25.123(c), 25.143(b)(1) and (b)(2), 25.149, 25.201(c)(2), 25.207(c) and (d), 25.239, and 25.251(b) through (e), must be met in icing conditions. Compliance must be shown using the ice accretions defined in appendix C, assuming normal operation of the airplane and its ice protection system in accordance with the operating limitations and operating procedures established by the applicant and provided in the Airplane Flight Manual.

(2) No changes in the load distribution limits of § 25.23, the weight limits of § 25.25 (except where limited by performance requirements of this subpart), and the center of gravity limits of § 25.27, from those for non-icing conditions, are allowed for flight in icing conditions or with ice accretion.

[Doc. No. 5066, 29 FR 18291, Dec. 24, 1964, as amended by Amdt. 25–23, 35 FR 5671, Apr. 8, 1970; Amdt. 25–42, 43 FR 2320, Jan. 16, 1978; Amdt. 25–72, 55 FR 29774, July 20, 1990; Amdt. 25–121, 72 FR 44665, Aug. 8, 2007]

§ 25.23 Load distribution limits.

(a) Ranges of weights and centers of gravity within which the airplane may be safely operated must be established. If a weight and center of gravity combination is allowable only within certain load distribution limits (such as spanwise) that could be inadvertently exceeded, these limits and the corresponding weight and center of gravity combinations must be established.

(b) The load distribution limits may not exceed—

(1) The selected limits;

(2) The limits at which the structure is proven; or

(3) The limits at which compliance with each applicable flight requirement of this subpart is shown.

§ 25.25 Weight limits.

(a) *Maximum weights.* Maximum weights corresponding to the airplane operating conditions (such as ramp, ground or water taxi, takeoff, en route, and landing), environmental conditions (such as altitude and temperature), and loading conditions (such as zero fuel weight, center of gravity position and weight distribution) must be established so that they are not more than—

(1) The highest weight selected by the applicant for the particular conditions; or

(2) The highest weight at which compliance with each applicable structural loading and flight requirement is shown, except that for airplanes equipped with standby power rocket engines the maximum weight must not be more than the highest weight established in accordance with appendix E of this part; or

(3) The highest weight at which compliance is shown with the certification requirements of Part 36 of this chapter.

(b) *Minimum weight.* The minimum weight (the lowest weight at which compliance with each applicable requirement of this part is shown) must